

Physiological basis of the contemporary human psyche imperfection

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Abstract. The article reveals the fundamental reasons for the emergence of problems that social development faces in modern society, related to human physiology. Understanding the nature of the human psyche and the adequate thinking algorithms open up the science prospects development. The article goal is to determine the root causes of these problems and the ways visible by the author to overcome the stagnation in the science development at the present stage, to a large extent generated by these causes. The author's method for solving the problem in a unique way combines views on the problem from different angles of fundamental sciences, combining them in a single solution in order to find a way out of the impasse in each of the sciences and the knowledge of nature as a whole.

The result of the study is also unique, because the author sees the ways to increase the efficiency of scientific research in the whole complex of fundamental sciences in the direction of the movement of scientific knowledge towards the goals defined by philosophical science, but undeservedly forgotten in daily scientific works. The problems of the human psyche imperfection are presented in an axiomatic format. The range of problems is outlined in a mathematical format according to the fundamental knowledge of philosophy, physics, biology, human physiology, medicine, and their author's systematization is also given below. It indicates the dead ends to which it can lead, and ways to eliminate the existing pressing problems. The drastic change and the rigid vector of the scientific research direction, proposed in the article, constitute its scientific novelty. As a result of a comprehensive analysis of these problems, the possibilities of overcoming this serious obstacle to social development are indicated.



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The practical significance of the article lies in the radical increase in the efficiency of scientific research, which is proved by the author.

Keywords: cybernetics, artificial intelligence, brain physiology, social development, efficiency of scientific research.

INTRODUCTION

The Aim of the Article. In the axiomatic format, outline the circle of the problem of the human psyche imperfection. Point out the problems to which it can lead and the ways to eliminate these problems [1 – 4].

Axiom No.1. Definitions of fundamental concepts in modern science.

1. "Matter is a continuous substance, the basis of being, which has the following properties: time, information-energetic excitation and discrete embodiment."

2. Field (discrete embodiment of matter) = Matter (M) + Energy (E).

3. Substance (discrete embodiment of matter) = Matter (M)+Energy (E)+Information (I).

4. For several centuries in a row, the world scientific community has been faced with the task of revealing the connection between continuous and discrete entities, as specific physical components of the universe, and revealing the mechanism of their mutual transitions, if any.

According to the general theory of relativity, space is inconceivable without physical vacuum; indeed, in such a space, not only would the dissemination of light be impossible, but the scales of not only space, but also time could not exist; there would be no space-time distances in the physical sense of the word.

It has been experimentally established that the physical vacuum is a material medium, which is a quantum field in which (the field) fluctuations are observed, elementary particles (that is, excited states of the quantum field) are being born, electromagnetic waves propagate, electric displacement currents of this field flow.

The physical vacuum is one of the forms of matter, which is the state of the quantum field with the lowest energy.

In the first approximation, the quantum field can be represented as a space filled with charge quanta, i.e. all energy levels of the physical vacuum are filled with quanta of the same sign (Dirac's theory of holes). Charge quanta are always moving (there is no matter without movement), therefore, a flow of magnetic quanta, called a magnetic field, is associated with the flow of charge quanta. Thus, a field quantum is a continuously moving electromagnetic quantum, which, as is known, moves only in a unique way, known as the electromagnetic wave moving method.

5. Physics and biology natural scientists interpret the field as a secondary material entity; substance as a tertiary entity; and the fundamental, ontological basis of the universe is considered not some indivisible discrete particle of a secondary and tertiary material essence, but directly the continuous substance itself, called

matter, which, due to its continuity, is not directly observed and not directly detected by the rest of the human senses. Thus, the universe is material, since matter is its basis, but the observed universe is not matter, but its secondary and tertiary manifestation.

6. The Elementary Particles Concept with geometric dimensions scale of 10^{-19} , which has become entrenched in modern science, is equally two-faced (dual): both in the form of a substance and in the form of a field quantum, depending on the parameters of the state of the environment in which they exist.

7. Modern physics eliminates the difference between matter and field, considering that all elementary particles [as elementary particles of matter - (now more than 500 names are known, but the exact number and name of elementary particles in the material world is not yet known to science!), and elementary field particles (the only name is quanta)] are quantum excitations of various fundamental fields. The main thing is that, one way or another, all particles exhibit such typical field properties as delocalization and subordination to the equations of motion that are essentially no different from field equations (which can be referred to as the wave properties of all particles, including matter particles). Revealing the close interrelationship between the field and matter has led to a deepening of ideas about the unity of all forms and the structure of the physical picture of the world.

8. At the border of the transition of a continuous substance into a discrete substance, all fundamental interactions, all physical laws originate, all physical and cosmological constants are born here. This stage, carried out on the basis of the information accompanying each field and substance, requires the close attention of scientists.

However, until today, science doesn't know even the generator of the meaning of this information, not to say its material conveyor, provided with an exhaustive set of its properties and characteristics. The methods of information exchange between the components of a multi-level complex architectural creation of living matter are also not known.

9. The vital activity of the material world lies in its continuous and eternal movement, which is provided by a finite set of physical forces that

obey the dialectic laws of the functioning and development of matter.

10. All 116 elementary, chemical substances of the material world on Earth are well known (periodic table), and it is only 4 substances in this table (carbon, hydrogen, oxygen, nitrogen), from which (substances) supercomplex architectural creations of living matter are created, on the basis of the information that accompanies these substances already mentioned [5].

Axiom No.2. The multicellular and multi-level architecture of the human body is well known. But there are still big problems with the exchange of information between the components of the human body architecture, as mentioned in paragraph 8 of axiom No. 1. Known, but not exhaustively; the information functions of the central, autonomic and peripheral nervous system. And nothing is known at all: whether there are channels for the exchange of information between the components of the architecture of the human body in addition to the nervous system.

Axiom No.3. The human nervous system is a complex architecture of neural networks that permeate every organ (out of 248 known organs) in the human body, but it is not known whether they permeate every cell of the 10^{14} cells in the human body. However, the number of synaptic inputs for a single interneuron reaches 150,000. Therefore, the total number of intercellular contacts is very large. For example, in the human brain with 10^{11} neurons, the number of connections between them is estimated at 10^{14} . Therefore, if you know for sure that neural networks cover all cells of the human body, then you can once and for all close the problem of direct information communication between cells of both one organ and direct communication between cells of different organs [6].

Axiom No.4. The human sense organs are provided with special elements of an electrical nature, called sensors, which are designed to measure the value of a parameter of the human body controlled by this sensor. The sensors send this measurement in the form of a current pulse through a neural network to a special receiver of the automatic controller, which ensures that this regulated value is allowed. Such a control system is called a closed-loop automatic control

system of direct action. The same system simultaneously ensures that this parameter is reflected in the human mind in the image that is a stereotype for the corresponding sense organ. For example, a reflection of a visual image. System is created by the nervous system according to a blueprint stored in the human genome. The information transmitted through the neural network is not encoded in any way. The carrier of this information is the value of the transmitted current from the sensor to the controller. System is called the first signaling system in the human body, which has another name, the reflex ring. The number of reflex rings in the human body is not yet known to science, but the fact that it can be calculated by 9 – 10 orders, taking into account the rings formed by the psyche, is quite possible. After all, every thought, elementary or structured, can be implemented exclusively in the ring of a neural network [7].

Axiom No.5. The emergence of speech in the arsenal of human communication with the external environment and related individuals promoted a second signaling system appeared as a tool of the human psyche, which makes it possible to encode the physical information mentioned in axiom No. 4 in the form of words, or their combinations in human speech. However, the second signaling system bases its work solely on the first signaling system. Without which (the first signaling system) the second signaling system is not able to function correctly.

The presence of a reflection and a second signal system in the human body has become the foundation for operating with elementary thoughts, since each of the reflections is an elementary thinking [8 – 9].

Axiom No.6. Operating with thoughts is called thinking, which always pursues the goal of establishing cause-and-effect relationships between elementary thoughts, reflecting by all means the cause-and-effect relationships between the forces that move matter. Since the movement of matter is the only reliable sign of its vital activity.

The cause-and-effect relationships between the forces that move matter are called the logic of the vital activity of the material world.

In the process of matter cognition, only the logic of its life activity is revealed, since it is in

science that it has received the status of natural laws of life activity of inanimate and living matter [10].

Axiom No.7. The life activity logic can be known exclusively through natural experimentation with the specific matter of the universe, since otherwise there is no way to obtain the information we need about the properties of this matter that are of interest to us, its interactions with the environment, and, moreover, its cause-and-effect relationships with components of this environment [11].

Axiom No.8. Vital activity logic ignorance of the studied universe phenomenon will certainly entail a collapse in any of your cognitive activities. No hypothetical theories can lead you out of this impasse, since they (these theories) are generated by the resource of the human psyche imperfection, explained by the psyche infancy when compared with the age of the wild world. The very psyche imperfection lies in the fact that it still allows operating with thoughts that are not supported by the first signal system [12].

Axiom No.9. The stay of a living mother, including complexly organized animals with a nervous system (SOJONS), in a state of continuous and perpetual motion, led not only to the emergence of the psyche in the matter of these SOJONS, but also the possibility of creating various mental images based on this matter.

Psychic images are used as reflections in the minds of an interacting pair of SOJONS individuals.

The psyche is defined as a property of a highly organized matter of a particular subject to reflect the objective reality of the universe and, on the basis of the mental image of this reality formed at the same time, to carry out not only operational, but also current and long-term management of the activity of this subject and his behavior. The reflection fixes in the memory of its consciousness the mental image formed by it (reflection) of the environment influence on it, which is necessarily consistent (image) with the worldview of the subject-reflector.

The highest level of reflection in living matter takes the form of the most complex and perfect reflection - mental reflection.

The consciousness of a particular person integrates the diverse phenomena of human reality, transforming them into a truly holistic way of life of this person.

Consciousness is an integral complex (system!) of higher mental functions (HMF), in which there are no fundamental and secondary functions. This is a set of equally important functions in the amount of 40-60 pieces, carrying out the highest level of the human psyche. Psychologists classify them as artificial, instrumental, arbitrarily controlled by a person functions that have a social formation. But professionals in neurophysiology, neuropsychology and biochemistry argue that HMF is realized:

- either on the genetic foundation of the stereotypical fragments architecture of neural networks specially designed for these purposes.
- or the human brain has a genetic neural structure loaded with the functions of the Universal Biological Architect, capable, in the space of its own population of neural stem cells, by differentiating these cells, to create arbitrary architectures of neural networks intended for the implementation of each of the HMF.

The last two statements have yet to be clarified by natural scientists in the near future.

The vital activity of consciousness and HMF ceases with the death of a person.

In newborns, the process of HMF and consciousness formation begins from the moment they are born.

The very approximate HMF list is as follows:

- mental reflection,
- perception,
- presentation,
- voluntary attention,
- arbitrary memory,
- rational activity (extrapolation reflex),
- speech,
- letter,
- logical thinking,
- imagination,
- consciousness,
- nine gnostic (thematic functions of cognition of natural phenomena) functions,
- twenty to forty intellectual functions.

The human psyche as a whole, with all its HMF, from the point of view of a neurophysiologist, combines the functions of two masters of theatrical art:

- a scriptwriter who describes the studied physiological phenomenon in the language of reflections, in which the active figures are the physical variables involved in the implementation of the dynamics of this phenomenon;
- the director who repeatedly stages the performance according to the already existing scenario of the studied phenomenon, classifying the performance itself as a fragment of his own intellect on the topic of this functionally fully investigated physiological phenomenon; at the same time, the director is certainly guided by: the influences of the environment, interactions with the environment and mental imitation of the interaction of "his own ego" with his own psyche.

The psyche solves the following tasks of human life support:

- active, but at the same time subjective reflection by the individual of the real universe;
- adaptive regulation of the states of one's own organism in accordance with the current influences of the environment and the current interaction with it;
- adaptive operational management of one's own behavior and reactions in accordance with the current environmental impacts and current interactions with it;
- the possibility of mental imitation of the interaction of "one's own ego" with one's own psyche [13 – 16].

Axiom No.10. The age-related psyche immaturity, noted in axiom No.8, is the reason for the presence of a number (more than 70 pieces) of harmful functions in its (psyche) composition, which conflict with the moral behavior of a person, even with his tribe fellows.

The list of malicious functions includes, for example, the following functions:

- selfishness, exploitation of man by man, falsification, authoritarianism, greed, aggression;
- double morality, greed, high self-esteem, envy, breach of trust;
- slander, lies, laziness, fraud, deceit, crime, meanness;
- robbery, the desire for easy money;

- the clan principle of organizing ideological, political, scientific and social activities;
- many other vices.

There is no doubt that the listed mental defects are determined by the low quality of the human genome project in the section of the human psyche organization. Undoubtedly, the evolution of the progressive human development will eventually eliminate these behavioral vices, just as the human species appeared at one time in the wild world. But for this evolution has spent at least a billion years. In the meantime, the listed behavioral vices have led to the self-destruction of all human civilizations in just a few millennia. And there is a plausibility of self-destruction of our civilization. But all this is done in the name of the progressive development of civilizations and should be accepted as a natural law of the progressive development of our universe [17].

Axiom No.11. According to the general theory of relativity, space is inconceivable without physical vacuum; indeed, in such a space, not only would the dissemination of light be impossible, but the scales of not only space, but also time could not exist; there would be no space-time distances in the physical sense of the word.

It has been experimentally established that the physical vacuum is a material medium, which is a quantum field in which (the field) fluctuations are observed, elementary particles (that is, excited states of the quantum field) are born, electromagnetic waves spread, electric displacement currents of this field flow.

The physical vacuum is one of the forms of matter, which is the state of the quantum field with the lowest energy.

In the first approximation, the quantum field can be represented as a space filled with charge quanta, i.e. all energy levels of the physical vacuum are filled with quanta of the same sign (Dirac's theory of holes). Charge quanta are always moving (there is no matter without movement), therefore, a flow of magnetic quanta, called a magnetic field, is associated with the flow of charge quanta. Thus, a field quantum is a continuously moving electromagnetic quantum, which, as is known, moves only in a unique way, known as the method of electromagnetic wave movement [18].

Axiom No.12. The space and time scales as factors that drastically complicate the process of the universe cognition.

Space is a form of existence of matter, characterizing its extension, structure, coexistence and interaction of elements in all material systems. Space expresses the coexistence, extension and structure of any interacting objects.

Time characterizes the sequence of changing states and the duration of existence of any objects and processes, the internal connection of changing and remaining states.

Scale is the ratio of the size of the image to the size of the depicted object.

In accordance with clause 6 of Axiom No.1, the concept of ‘elementary particles’ that has become entrenched in contemporary science with geometric dimensions on a scale of 10 – 19 is equally two-faced (dual):

- both in the form of a substance and in the form of a field quantum, depending on the parameters of the state of the environment in which their vital activity is carried out.

This experimental fact indicates that the knowledge of the laws of the matter vital activity with the help of human senses without amplifiers, for example, vision by 10^{-19} times and rate change inhibitors in the states of the studied natural phenomenon by the same 10^{-19} times, is fundamentally impossible.

However, at the present time there already exists desktop filming equipment with a resolution of 10^{15} times the amplification and slow-down of the mentioned parameters. It is possible to start the study of living matter on this existing equipment. But in parallel and urgently, filming equipment with a resolution of 10^{19} according to the mentioned parameters should be created. That is because fundamental science does not need other scientific research yet. The narrow neck of unknown matter does not allow any useful knowledge at the current time to escape from the sphere of capacity, filled to the brim with fundamental ignorance about our Universe [19].

Axiom No.13. There are two options for the behavior of the international scientific community in the current situation with the knowledge of the secrets of the the human body progressive evolution, and above all its psyche.

Option 1.

- Without interfering with the natural secrets of improving the human psyche through the progressive evolution of its genome;
- and without changing the current paradigm of scientific activity in the international scientific community;
- wait a couple of billion years;
- and then, evaluating the new human psyche;
- and accepting it as perfection in the field of psyche that satisfies the scientific community, create a new model of organizational management of this new civil society, and continue its prosperous life;

Option 2.

Nowadays it is more than obvious which topic of knowledge has become a bottleneck in the capacity area filled to the brim with fundamental ignorance about our Universe.

This topic is Matter as a continuous substance and the ontological basis of the universe with its discrete manifestations: secondary (field) and tertiary (substance) manifestation.

For several centuries in a row, science has faced the task of revealing the connection between the continuous and discrete as specific physical entities of the universe and revealing the mechanism of their mutual transitions, if any. But this problem is not solved.

As noted in paragraph No.4 of Axiom No.1, matter has no structure; it exists in the form of a continuous substance, a continuous medium in which there are no discrete components and any measurable physical quantities. From this it follows that matter cannot be perceived by the known organs of human senses. Even with the necessary amplifiers for each of the human senses. The perceived organs of human senses in the presence of appropriate amplifiers are derivatives of matter - its discrete incarnations: field and substance. However, the very mechanism of formation of matter derivatives and the regularities present in it are not yet known to the international community. Although naturalists do not have doubts about the genetic connection between the concepts of matter, field, substance.

The systematic analysis of the matter cognition problems proposed in the article, as the ontological foundation of its derivatives – that is fields and matter – and in particular, the living matter cognition problems (the physiological

foundations of the modern human psyche imperfection), allows us to draw the following disappointing conclusions.

The end of the 19th and 20th centuries was marked by paradoxical discoveries in the natural sciences, which inevitably had to, and of course, plunged these sciences into fatal stagnation. The cardinal goal of understanding the universe for the natural sciences was not initially clearly formulated, since there was no single thematic center for understanding the universe on planet Earth. Therefore, the world community has taken the path of least resistance in social development: the path of liberal market relations in the labor products exchange sphere between participants, including the international scientific community, engaged in free creativity in the natural sciences.

The result has become more than obvious only now, after almost three centuries: permanent political and economic crises literally in all forms of socio-economic systems (SES). Corruption at all levels of management of these systems, degradation of the legal system as the basis for the SES organizational management, falsification, ignorance, fraud, total mutual deceit for selfish purposes, total destruction of environmental values, the transformation of the normative parameters of the human body life into pathological maxima and countless everything like that.

After all, it is impossible even for a second to assume that people initially did not understand what kind of knowledge about the vital activity of natural phenomena must be obtained in order to be able to reproduce this for selfish purposes.

It is more than obvious that in addition to the dialectical logic of the life activity of this or that phenomenon, which (logic) is a cause-and-effect relationship (called natural laws) between the forces that carry out the matter perpetual motion; other knowledge is not needed in principle. Dialectical logic gives an exhaustive idea of the vital activity of this or that universe phenomenon and allows, on its basis, to create a set of models covering any goals of real knowledge of this phenomenon.

The essence of the adjective 'dialectical' combines five global matter properties:

- the universal unity of its components;
- universal interdependence of its components;

- universal internal inconsistency of its functionality (unity of opposites);
- continuous in time transformation of its quantitative changes into a new quality;
- continuous updating of its obsolete functional components with more progressive components.

It is enough to familiarize one selves with the topics and countless burials in the world cemetery of delusional hypothetical theories in the natural sciences in order to recant once and for all:

- from market relations in scientific activity;
- from funding similar relationships in fundamental science.

Is it possible to consider non-deterministic cognition as serious scientific creativity, if probabilistic cognition, by definition, can be based solely on the facts of deterministic cognition obtained through natural experimentation, but in fact, the necessary deterministic cognition does not precede modern probabilistic cognition? At least - this is a paradox, as a maximum - nonsense!

But all modern quantum theories in the natural sciences, including the Standard Theory and the Theory of Everything, are based on Schrödinger's probabilistic concepts:

- replacing the stationary trajectories of electrons in the atoms of all substances of the periodic table with a cloud of electrons;
- and on his own statement about the incompleteness of any quantum theory, due to the lack of facts in them of deterministic knowledge of the phenomenon under study.

At the same time, he proves the incompleteness of quantum theory with such a thought experiment. If there is no possibility of continuous observation of the cat, as is done with deterministic knowledge of the states of the cat, then it is possible to assume that the cat is in two states at the same time: alive and dead. With continuous observation of a cat, the simultaneous life and death of a cat is absurd, as follows from life practice.

In my opinion, just incompleteness of quantum theories is quite enough to abandon them. All the same, they must be supplemented with facts of deterministic knowledge. Moreover, the absence of a stationary orbit for each electron should give rise to an energetic collapse of the

atom. Natural experimentation with atoms does not show this effect. This means that the electron cloud is just a hypothesis, which belongs to the cemetery already mentioned in the context.

Therefore, based on the fact that on the topic of the article title, all problematic issues are listed clearly and distinctly.

FINDINGS

Today it is more than obvious which topic of knowledge has become a bottleneck in the sphere of capacity filled to the brim with fundamental ignorance about our Universe. This theme is Matter as a continuous substance and the ontological basis of the universe with its discrete incarnations: secondary (field) and tertiary (substance) incarnation.

For several centuries in a row, science has faced the task of revealing the connection between the continuous and discrete as specific physical entities of the universe and revealing the mechanism of their mutual transitions, if any. It is on the knowledge of the concept of “matter” and all its properties and characteristics, as well as the algorithms for the formation of derivatives of matter, that all human, financial and material resources of fundamental science should be aimed.

All other research problems related to all kinds of technological problems of economics, politics and sociology should be shifted to applied science [20]. The unrecognized problematic issues listed in the article should become the next topics of cognition of academic science immediately after the completion of the cognition of Matter and its discrete incarnations.

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Физиологические основы несовершенства психики современного человека

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Abstract. В статье выявлены фундаментальные причины появления проблем, с которыми

сталкивается общественное развитие в современном обществе, связанных с физиологией человека. Понимание природы человеческой психики и алгоритмов здорового мышления открывает перспективы для развития науки. Целью статьи является определение коренных причин указанных проблем и видимых автором путей преодоления застоя в развитии науки на современном этапе, генерируемого этими причинами в значительной мере. Авторская методика решения поставленной задачи уникальным образом объединяет взгляды на проблему с различных ракурсов фундаментальных наук, объединяя их в едином решении с целью поиска выхода из тупика в каждой из наук и познании природы в целом.

Результат исследования также уникален, т.к. пути повышения эффективности научных исследований в целом комплексе фундаментальных наук автор видит в направлении движения научного знания к целям, определённым философской наукой, но незаслуженно забытым в ежедневных научных трудах. Проблемы несовершенства психики человека изложены в аксиоматическом формате. Круг проблем очерчен в математическом формате по фундаментальным знаниям философии, физики, биологии, физиологии человека, медицины, а также приведена их авторская систематизация. Указано на тупики, к которым оно может привести, и пути устранения существующих насущных проблем. Кардинальное изменение и жёсткий вектор направления научных исследований, предлагаемые в статье, составляют её научную новизну. Как результат всестороннего анализа этих проблем, указаны возможности преодоления этого серьёзного препятствия на пути общественного развития. Практическая значимость статьи в доказываемом автором радикальном повышении эффективности научных исследований.

Ключевые слова: кибернетика, искусственный интеллект, физиология мозга, общественное развитие, эффективность научных исследований.